

**Notice of Allowability**

Application No.

10/788,725

Examiner

Hong C. Kim

Applicant(s)

MORROW, MICHAEL W.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/10/07.
2. ☒ The allowed claim(s) is/are 1, 2, 21, 4-6, 8, 24, 25, 10-15, 16-20, 29, 22, 23, 26-28 (renumbered to 1-26).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 4/16/07.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

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**Detailed Action**

1. Claims 1, 2, 21, 4-6, 8, 24, 25, 10-15, 16-20, 29, 22, 23, 26-28 are presented for examination. This office action is in response to the amendment filed on 4/10/07.
2. Applicants are reminded of the duty to disclose information under 37 CFR 1.56.

***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title should be more specific to differentiate the invention from similar inventions in the patent literature. "instruction cache and trace cache portions", "indexing logic", "TCache portion is indexed only when a processor executes one of: a branch instruction; a jump instruction; a call instruction; and a return instruction" aspects of the invention should be mentioned in the title so that the title is more descriptive.

***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a system for "an instruction indexing logic, wherein the indexing logic is not used for either the tCache portion or TCache portion when the TCache portion is supplying instructions, instructions; and the TCache portion is indexed only when a processor executes one of: a branch instruction; a lump instruction; a call instruction; and a return instruction"

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and a flow diagram for “filling an array with instruction cache (ICache) cache lines mixed with trace cache (TCache) cache lines where an allocated proportion of ICache cache lines to TCache cache lines is dynamically changing with time and neither the ICache portion nor the TCache portion are looked-up when the TCache portion is supplying instructions; and using an instruction indexing logic to select some instructions, wherein the indexing logic is not used for either the ICache portion or TCache portion when the TCache portion is supplying instructions, instructions; and the TCache portion is indexed only when a processor executes one of: a branch instruction; a jump instruction; a call instruction; and a return instruction” must be shown or the feature(s) canceled from the claim(s).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **REASONS for ALLOWANCE**

5. The following is an Examiner's statement of reasons for the indication of allowable subject matter: renumbered claims 1-26 are allowable over the prior art of record because an update of a search previously made does not detect the combined claimed elements as set forth in the claims 1-26. Specifically, claims are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a device, a system, method comprises a cache array having cache lines filled with contiguous instructions in an instruction cache (ICache) portion that is adjacent to a trace cache (TCache) portion wherein cache lines are filled with elements of a trace; and neither the ICache portion nor the TCache portion are looked-up when the TCache portion is supplying instructions; and an instruction indexing logic, wherein the indexing logic is not used for either the tCache portion or TCache portion when the TCache portion is supplying instructions, instructions; and the TCache portion is indexed only when a processor executes one of: a branch instruction; a lump instruction; a call instruction; and a return instruction as described in the specification and together with combination of other claimed element as set forth in the claims. Also the reasons for allowance of the claims over the prior art of record is believed to be clear from the prosecution records taken as a whole. Therefore, claims 1-26 are allowable over the prior art of records.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons For Allowance."

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong C Kim whose telephone number is (571) 272-4181. The examiner can normally be reached on M-F 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571) 272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 whose telephone number is (571) 272-2100.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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9. **Any response to this action should be mailed to:**

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**or faxed to TC-2100:**  
(571)-273-8300

Hand-delivered responses should be brought to the Customer Service Window (Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

HK  
Primary Patent Examiner  
April 16, 2007

A handwritten signature in black ink, appearing to be 'H. C.', is written over the text of the Primary Patent Examiner.